Language Change and Language Acquisition

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1. Introduction

Grammars, seen as mental organs, may change between two generations. A change is initiated when (a population of) learners converge on a grammatical system which differs in at least one parameter value from the system internalized by the speakers of the previous generation. Learnability issues then connect to both language acquisition and language change, and understanding language changes depends on understanding how children acquire their native language. Acquisition is a process in which Universal Grammar (UG) interacts with a context-specific set of Primary Linguistic Data (PLD: the linguistic input to the child-learner). The child uses these PLD as the source for cues and the innate (pre-experience) knowledge grows to a mature grammar.

The aim of this paper is to present diachronic changes in general in terms of the conditions of first language acquisition. We will make a clear distinction between I-language changes and E-language changes; we treat E-language changes as changes in the trigger experience, the input available to the child during language acquisition, paving the way for a possible I-language change, that is, formal change in the grammar that takes place with a new generation acquiring the language. Hence, it becomes important to make a distinction between the two notions grammar and language. We take GRAMMAR to be a system in people's mind/brain (language competence; I-language), but we take LANGUAGE to represent the product of the system; what people *use* in their communication (language performance; E-language). I-language can be said to be collections of parameter settings. Hence, traditional work in historical linguistics deals with E-language, while generative grammar is concerned with I-language. We can describe the different approaches as treating diachronic changes as a) a change in the internal system itself (grammar change), or b) a change in language use (language change). In the latter case, we would take the language to be a historical phenomenon (E-language), focusing on the history of the language: *what* happened, *where* and *when*. Unlike grammar change, a change in language is dependent on *time*. Change in language is a process that takes place between two different times. The change has its beginning, course of development, and end. It is the journey of a change in time and space through the language community. In the former case, on the other hand, we focus on *how* the

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internal grammar changed and *why*. Change in grammar means that in the mind/brain of some language user, the internal system took a different form than it has in the mind/brain of other language users (cf. Hale 1996:9-15). We may also view the distinction, as for example Lightfoot (1999) does, between the two types of change as one between abrupt (grammar change) and gradual (language change), both types dependent on *time*, but of course in two different ways.

2. The role of acquisition in grammar change

As recent generative theory postulates universal principles of grammar formation rather than characterizing the acquisition of language as the product of general cognitive growth, the task of approaching language changes differs greatly whether we take a generative point of view or not. Within generative linguistics, language changes are often assumed to take place between two generations, that is, with a new generation acquiring the language on the basis of the parents' output. Hence, in searching for an understanding of language changes, it is important to try to understand how children acquire their native language.

There are three basic questions involved in the generative approach that all focus on the connection between language and mind:

(1) a. what are the units of human languages?
b. what is it about human minds that gives us this special ability to master languages?
c. how do children learn languages?

We may alter these questions slightly with regard to the learnability issue, as shown in (2) (cf. Chomsky 1986:3, 1988:3 and 133).

(2) a. what is language competence?
b. how do children acquire language competence?
c. how do children use their language competence?

The answer to the first question is based on language description. We must have a description of the surface phenomena of the language in order to be able to predict anything about the language knowledge (language competence) it is based upon. The second question is the famous *Plato's problem*: How do children acquire so much, so fast, on the basis of limited evidence? (Chomsky 1986:xxv-xxvii). The Principles and Parameters approach provides us with the following solution of *Plato's problem*:

- Universal principles need not be learned
- The child needs to learn the setting of the parameters which vary across languages
- In cases where a single parameter has effects on a variety of different properties of the language, hard-to-observe properties of the language could be learned based on easy-to-observe properties

Understanding and performance is the answer to question (2c): we must know what process takes place in the human mind when we speak and when we interpret what other people say (Chomsky 1986:4, 1988:93ff, 135-136, 147-152). Since we only have an indirect access to the innate grammar, we must look for answers to the questions in (2a-c) through language use.

A central question that we can ask is whether there is a reason to use generative grammar as a model when approaching diachronic change[1]. If diachronic linguists ask the same questions as those put forward by Chomsky in (2a-c), in addition to questions related to the diachronic perspective, we see that studies on diachronic change can help us to explain and thereby understand the language faculty: if we fail to understand how and why innovations take place in languages, then we fail to understand both language changes and language competence, or at least how it is acquired. Diachronic linguists can describe the grammar of a language with the *same methods* and the *same ideas* as generative synchronic linguists: we can describe the grammar as it was before and after a certain change. Historical syntax is very similar to comparative synchronic syntax: Different I-languages are analyzed and compared. Thus, historical syntax is really a kind of comparative syntax, executed along the *time*-dimension (cf. Åfarli and Nordgård 1998). Of course, this is not the whole story. We certainly need some additional tools to describe and not least understand how and explain why the change took place. We need to locate language change while taking language competence into consideration, that is, explain the change on the basis of this competence, how we use it and how we acquire it.

The main task here is to compare different systems (grammars) and explain the difference. Hence, we need to have knowledge of two (or more) synchronic stages. In order to know what changed between stage I and

[1] Åfarli and Nordgård (1998) and Åfarli (2000) discuss a related set of questions within the Chomskyan framework. For alternative views on the subject, see also Faarlund (1990), Harris and Campbell (1995), and Dyvik (2000), who all address several of the same questions.

stage II, we need to know what these two stages were as synchronic stages. We can divide the task of diachronic linguists into three parts:

(3) a. describe a series of synchronic stages
b. compare a series of synchronic stages
c. explain the difference

It is usually assumed that the grammar is fixed (the parameters have been set) before the speaker's adulthood. It is thus necessary to emphasize that a grammar change does not occur by a child-speaker changing her grammar; the change in *grammar* takes place from one generation to another. However, it is necessary to assume either some changes in *language* during one generation, or simply a language change in the linguistic community, for instance a gradual change in usage, which then leads to the 'new' input for the next generation. Otherwise the input of the next generation will be the same as that of the previous one, resulting in identical grammars.

We argue that it is natural to expect grammar changes to take place where there is no obvious connection between interpretation of the output (the E-language) and the grammar. Grammatical phenomena cannot be acquired correctly unless they are clearly reflected by language performance. If a certain grammatical property has survived through many generations, it must have been reflected clearly in the PLD. Then, if we note that it has changed at some point, something in the language performance of the previous generation must have changed, and thereby paved the way for a new interpretation. We assume that innovation leading to linguistic variation in the PLD and gradual changes in PLD play a central role in the explanation here. The immediate cause of a grammar change must lie in some alteration in the PLD. The language spoken in a certain community (E-language) may gradually become different from the language that originally served as the triggering experience earlier. These changes in the E-language constitute changes in the input available to the child-learners of the next generation and a motivation for a different parameter setting may have arisen. Change in PLD may itself be the result of some antecedent change, such as the loss or weakening of overt morphologically motivated alterations in frequency, or perhaps simply arising as a chance fluctuation in frequency.

Finally, we can ask whether gradual changes within the E-language can pave the way for an acquisition-based I-language (grammar) change or whether changes in usage may also be regarded as changes of I-language. Chomsky (2000:32) claims that "changes in usage … may in fact be marginal changes of I-language, or changes in belief systems, here

construed as (narrowly described) C[omputational]-R[epresentational] systems of the mind, which enrich the perspectives and standpoints for thought, interpretation, language use and other actions …" That is, can we assume substantial changes in the E-language, without there being any changes in the I-language? The traditional view here is namely that changes in the E-language reflect changes in the I-language (thus, such concepts as grammar competition, cf. Kroch 1989). This leads us to the question of what exactly the E-language then is, or whether it is indeed real. Our answer is that the E-language must be something real as it contains the *cues* of the language. This in turn leads, for instance, to questions like: Is what constitutes a cue dependent on statistical properties of the E-language? Is there a universal set of cues (like there is a universal set of categories), the child is scanning the input for? Or are cues relational properties of input data, such that what counts as a cue in one language, is not a cue for the same phenomena in another language? What is the relationship between what counts as a cue and maturation? Which principles influence what constitutes a potential, a relevant, or actual cue? How complex can cues be, etc.? We will not attempt to answer these questions here, but note that Lightfoot's (1999) cue search system, for instance, does not specify effective (universal) methods of cue recognition.

Roberts and Roussou (2002) and Trips (2001, Ch.3) argue for a crucial distinction between the notion of cues and the notion of parameters. In Lightfoot's (1999) cue-based acquisition, on the other hand, cues are fragments of the trigger experience a learner is exposed to, a part of a structure, whereas parameters are abstract properties of grammars. Hence, the parameters are the cues.

3. Explaining grammar change

3.1 Introduction

In this section, we will approach the causality of change; that is, *why* linguistic change occurs in the first place and *why* one change takes place instead of another. Furthermore, we will focus on the distinction between grammar (parameter) change, and the changes in the linguistic environment (PLD) that precede a parameter change.

It is a well-known assumption that a child does not inherit a certain parameter setting from her parents, nor does she have a direct access to the *grammar* of the older generation. Instead, the child generates her grammar on the basis of the language the older generation produces, that is, their output. Consider the model in (4) (cf. e.g. Andersen 1973:767; Lightfoot 1979:148).

(4)

Older generation	Younger generation
Grammar 1 →	Grammar 2
↓	↓
Output 1	Output 2

As indicated in (4), there is no direct connection between the two grammars; the grammar itself can thus not be transferred directly. How then is a grammar change possible? Grammar 1 (the parent's I-language) generates Output 1 (the parent's E-language) and the younger generation generates Grammar 2 (their I-language) on the basis of Output 1, and Grammar 2 further generates Output 2 (the child's E-language). However, the question of why there should be any difference between Grammar 1 and Grammar 2 and between Output 1 and Output 2 is still unanswered.

According to Lightfoot (1979, 1991), a change in syntax consists of an abrupt grammatical reanalysis within the new generation acquiring the language.[2] This approach assumes a rich, highly structured Universal Grammar, consisting of principles and parameters that are set by triggers in the language learner's linguistic environment. More importantly for our purpose, the approach assumes language change and language acquisition to be intimately connected: The child, due to some specific properties of the input at a given historical period, acquires a grammar which differs in at least one parameter value from that characterizing the linguistic competence of the previous generation. Lightfoot assumes the learning stage to be the place where grammar change occurs. Two different grammars may have a very similar underlying form, but different motivation and different transformations to derive their surface forms. The transparency principle restricts what a grammar can look like; if the grammar becomes too complicated, it is no longer learnable. The position that language change takes place during the process of language acquisition is also clearly expressed by Clark and Roberts (1993:300): "the logical problem of language change cannot be separated from the logical problem of language acquisition; one of the claims of this article is that the former problem is a subcase of the latter".

Although there seems to be a general agreement that language acquisition and language change are closely related, it has not been shown explicitly how this works. There are still some fundamental questions that have not been answered. Of course, some attempts have been made to

[2] A resetting of parameters in an individual's grammar is necessarily abrupt, whereas innovation in a speech community is gradual (innovations gradually spread in a language community). Hence, *language* change is gradual whereas *grammar* change is abrupt.

explain the connection between language acquisition and change. Lightfoot (1979, 1991, 1999) develops several different approaches and Clark and Roberts (1993) is another attempt. One solution to the relationship has to do with markedness and the idea that children have a tendency to analyze the language in as simple a way as possible, although, of course there does not seem to be a global move towards simplicity.

Contra this view, Lightfoot (1999) outlines a cue-based acquisition and its link with language change. A fundamental point is that we cannot expect to find internal explanations for change, that is, tendencies for languages to simplify or to grammaticalize, despite the fact that historical linguists have persisted in those notions from the nineteenth century right up until the present day. Rather, change can only happen when there is a shift in PLD; that is, a given child will acquire a different grammar from her mother if and only if she is exposed to different input.

Another related task is to investigate the connection between language acquisition and change, within the current generative framework. It is generally assumed that it is possible to use the generative framework to analyze the grammar not only of one language but also the differences between the grammars of two or more (comparable) languages. Furthermore, language change is also simply analyzed as a consequence of a new setting of a given parameter. However, we claim that the generative framework can only provide us with tools for the descriptive part, and that it does not give us an answer to the question of *why* the change really took place. Of course, this leads to the question of whether changes are necessary directly for system-internal reasons, or whether some external (social) factors must always trigger the change. If so, how does language acquisition come into the picture? (Kroch 1989b:201) claims that "When a language changes, it simply acquires a different grammar. The change from one grammar to another is necessarily instantaneous and its causes are necessarily external." Weerman (1989) also emphasizes that visible changes in the language are necessarily caused by factors outside the grammar. Even in the case of external factors, acquisition is arguably very important for change. In the spirit of Longobardi (2001) we claim here that syntactic change is not primitive. In other words, syntactic change should not arise unless it can be shown to be *caused*, either as a consequence of other types of change (phonological/morphological), or other syntactic changes. There is also a fundamental question about linguistic change that does not get posed very often; namely: How accurate is language learning in the ideal case of a monolingual community without outside contact? If it is very accurate, then all change must come from outside the grammatical system. If it is imperfect, there is room for internally generated change. The

notion "outside the system" is, of course, complex. For example, phonetic pressures could be thought of as external to the phonology, and phonology and morphology are external to the syntax.

We take the cause of *language* change to be external, where *external* has a twofold meaning: Type A: internal to the grammar but outside the syntax. Hence we have interaction with other components, where change at other levels of the structure can lead to a change in the syntactical component, and Type B: outside the system, that is, change due to social and/or cultural factors, such as language contact or catastrophes in populations. These external factors may cause small changes in the E-language (PLD), and this may lead to a major change (grammar change) in the next generation's I-language.

In order to understand grammar changes we have to try to find answers to three basic questions:

(5) a. what can change?
b. how does it change?
c. why does the change take place?

In this paper, we are mainly focusing on the last question, namely, why do grammar changes take place? The answer is, at least partly, to be found in the different parsing of information between generations. However, we also have to answer why this different parsing took place and how we might be able to explain the fact that a certain grammar that has survived for many centuries (many generations) is suddenly replaced. In our search for an answer, we must look at the interpretation process concealed in first language acquisition, along with children's ability to select from and reject information they receive through the language performance (output) of adults and the possible relationship of this selection with grammar changes.

Various explanations that have been put forward in recent years about diachronic changes do not strictly speaking explain the *source* of the innovation but rather its *spreading*. A possible reason for this is that diachronic linguists do not have a long tradition for searching for answers to their questions in the spirit of generative grammar. The most important factor here is the generative assumption that language structure is a knowledge (competence) in the brain/mind of individual speakers: If language structure is within our brain, then diachronic changes must be connected to it and the spreading of changes, perhaps taking place through many generations, must therefore be something different: they are connected to language *use* (E-language). We must therefore seek to cut off the connection between an innovation in the language system, on the one

hand, and the spreading of this change through the language community, on the other hand. Explanations based on people's social position, for example, must be connected to spreading rather than the source of the change. A confusion of this view can be seen in Aitchison (1991:173), where she claims that children have little of importance to contribute to language change because babies do not form influential social groups.[3] Explanations for language changes based on topographical information, transportation, geographical isolation, etc. must also take to the prerequisite for the spreading of changes that already have arisen. Note, however, that the changes that have arisen need not be changes in anyone's I-language. It can be innovative language use, borrowed forms, etc.; that is, changes in the E-language.

We argue that an explanatory success of a diachronic change includes a three step process, including E-language change leading to I-language change, and presumably two very different kinds of diffusion:

- Innovation of variation (E-language change)
- Diffusion (gradual diffusion in language use)
- Acquisition based grammar change (I-language change)
- Diffusion (faster)

In the spirit of Longobardi (2001), we take the first process to involve *historical* (or *genetic*) explanation, typical for evolutionary phenomena and often exemplified by the results of the historical-comparative method in linguistics, and the third process to involve a *theoretical* explanation, typical for current generative grammatical research.

3.2 Simplicity

Many scholars have argued that simplification is the essential motivating force behind linguistic change, although they were at the same time puzzled by the fact that languages never seem to end up maximally simple. Although there does not seem to be a global move towards simplicity, it is plausible that changes may proceed by local simplifications which can create complications elsewhere in the system. A classic example is sound change simplifying endings etc., but thereby complicating morphology or syntax. Furthermore, there are many natural disruptive forces at work.

In the philosophy of science, simplicity is generally understood to come into the picture when we have some domain of enquiry and two or

[3] However, this may still be correct with regard to the *initial* change in the PLD, depending on which age group is the most important source of the PLD. If we assume this to be the *parents*' E-language, then Aitchison is presumably right. Older children, e.g. siblings, can play an important role in shaping the trigger experience.

more theories equally supported with respect to observations in this domain, then the simplest of the set of theories is preferred. "Simplest" here is further related to judgements of elegance, generality of laws and rules, number of construct-types, etc. Transformational linguists attempted to incorporate such notions into the statement of an evaluation measure, as in Chomsky and Halle's (1968) The Sound Pattern of English (see also discussion in Halle 1961). In early linguistic theory, the notion of simplicity was generally recognized to serve the same role as it does in most natural sciences, that is, as a criterion to highlight generalizations that had the form of laws, while ignoring irrelevant data. This interpretation of the notion of simplicity, as noted by Berwick (1985:217), went "hand in hand with a particular notational or representational system, a language for writing down theories of grammar." Furthermore, simplicity was from the early days of generative grammar taken to represent the use of length or compactness as a proxy for theoretical generalizations. As noted in Chomsky (1995:8-9), the shift of perspective provided by the generative (P&P) approach changed the way simplicity considerations enter into the theory of grammar.

We have to have to be careful in using terms like *simple* and *easy*. There is, for example, a great difference between claiming that *children seek to simplify the grammar* and claiming that they seek to find the *simplest solution* to produce the same output as their parents. In other words, we reject the possibility that children seek to simplify the E-language, and instead argue that they may seek to simplify the algorithm/parsing process**.** The main reason for this is that, if we assume that grammar changes take place because something in the grammar had been too complex or difficult, then, naturally, we have to ask the question of how this complexity was established in the language in the first place and how it survived in the language, perhaps for many centuries. At the same time, we have to ask why we find all this complexity in our language if it would be a real option for children acquiring their language to simplify whatever they find difficult. Hence, the question is: why didn't we already arrive at the maximally simple grammar millennia ago?

Of course, it isn't always easy to see what a simplification is and what isn't. It is also quite possible that a grammar change that looks like a simplification can lead to increased complexity elsewhere in the grammar and thereby even cause a change there. A complex rule in phonology might for example be able to simplify the inflection and a simplification of the inflection might lead to increased complexity of both the phonological system and the syntax.

We know from human language studies that children can learn very complex phenomena in a relatively short period of time during their first language acquisition. Why should we assume that sometimes they give up? It is probably more correct, as Guðmundsdóttir (2000) notes, to assume that they never give up and that they do not stop to try until they are certain that they have reached their goal. However, then we also have to ask what this means in the context of P&P theory. It can only mean that a parameter system has a built-in notion of stability, and once stability is attained, it no longer changes. One obvious notion of stability is the setting of all parameters; another might be pure maturational.

Although we reject here the hypothesis that a certain grammatical phenomenon can be too complex and that some kind of an intention to simplify the grammar is involved in grammar changes, it might not be right to reject the terms *simple* and *complex*. If the phenomena of the grammar can differ with respect to complexity, it is indeed a very interesting research topic to investigate whether there is a connection between grammar changes and some levels of complexity of the phenomena of the grammar. For instance, "complex constructions" might involve too many interactions between parameter settings to be useful as *cues*.

It has been pointed out for a very long time that we must examine the nature of the interaction between restrictiveness and learnability. A complete theory of language learnability must specify how the learner uses the input data to drive hypothesis formation. The main problem is that there is potentially no end to the number of generalizations available to the learner. So, how can the learner use the input in such a way as to make good hypotheses about what the grammar/language looks like?

One important factor in the language acquisition process for child-learners is the assumption that languages are structure dependent (Chomsky 1972). This means that knowledge of language depends on the structural relationship in the sentence rather than on the sequence of items. This fact has a number of implications for language acquisition: The child-learner is able to formulate only structure-dependent hypotheses in the course of language acquisition. Children must be able to find the units in their particular language and detect which units are structurally dependent on what other units in that language. This in turn involves recognizing the hierarchical structure of the language and learning what grammatical devices (e.g. word order, inflectional marking, or tones) the language uses to create various types of syntactic units (see discussion in Hirsh-Pasek and Golinkoff 1996:15). Hence, the children do not have to learn all the individual items in the language, but they can interpret the information into a comprehensive system. If the assumption that children's hypotheses are

restricted to those that take into account the structural properties of sentences is correct, then this will considerably restrict the hypothesis the child-learner must entertain, helping her to solve the logical problem of language acquisition. Innate knowledge of constraints such as structure dependence provides the child with information about ungrammatical strings, that she would not be able to acquire otherwise without negative evidence, and hence it aids the child-learner in avoiding wrong turns and therefore it lessens the need for detailed corrective feedback of grammatical errors. Furthermore, they may set "a boundary condition on the hypothesis children can formulate in response to their linguistic input" (Crain and Lillo-Martin 1999:187).

Lightfoot's (1979, 1991, 1999) models are based on this hypothesis: Lightfoot has argued that learners do not pay attention to all of the syntactic features of the language they are acquiring, instead they are sensitive only to root binding domains (in other words, they are "degree-0-learners") (Lightfoot 1979, 1991) and only to specific cues that provide unambiguous evidence for a parameter setting (Lightfoot 1999). Following Dresher and Kaye (1990), Lightfoot (1999) puts forward an independent continuation of the hypothesis about parameters of UG and how they can be set. Children need experience – trigger – from the language in order to be able to set the parameters of UG. Although the claim about UG and parameters helps us to understand how children are able to acquire their language, that is, helps us to solve Plato's problem, the children's task is nonetheless great. Even though we only assume a very restricted number of parameters, each with only two possible settings, the children still have to measure their information against a great number of variations, that is, all the possible constructions that the parameters offer (see Lightfoot 1999:259). Therefore it is clear that the number of parameters must be further restricted, at least if we assume children to be matching their input. This is where Lightfoot's *cues* come into the picture: Children know what to look for in the information they receive, so instead of computing the sentences that grammars generate and measure them up against the different parameters, they scan their environment for designated structures or cues; no input matching takes place, and there can be 1000 cues without comparable plausibility problems (Lightfoot 1999).

4. Summary

As we have discussed, children do only have access to the grammar (I-language) of their parents through their language use (E-language). Therefore it is natural to expect grammar changes to take place where there is no obvious connection between interpretation of the PLD and the

underlying grammar. Only those aspects which are clearly reflected in the PLD can be acquired.

Following, partly, Hale (1998), Lightfoot (e.g. 1979, 1991, 1999) and Kroch (2001), we have argued that grammatical phenomena cannot be acquired correctly unless clearly reflected in the output. Hence, a grammar change may take place when there has been a change in the language use of the previous generation, paving the way for a new interpretation. We argued here that it is possible that gradual changes in PLD play a central role in the explanation here. Lightfoot has argued at length, correctly, that there cannot be gradual evolution in an acquisition-based theory of change. What we are arguing, instead, is for a gradual evolution within the E-language, paving the way for an (acquisition-based) I-language change. Lightfoot (1979 and elsewhere) has also proposed that variation in the grammars of successive generations is responsible for grammar change.

We assume that the E-language can develop gradually between generations, without this causing a major grammar change. In this way, language use can go through a gradual development/changes from generation 1 to generation 2, and again to generation 3. This is then a natural process of development from one generation to another. Within generation 3, then, we can assume that the language use (PLD) no longer reflects the underlying grammar (I-language) completely and a grammar change (parameter change) takes place. But why would this happen? We assume the answer to this question to be concealed in innovation of variation in PLD. We take the PLD to be influenced by external factors. Hence, we need to assume (at least) two important steps in order to have an explanatory success of a diachronic change:

- innovation of variation (E-language change)
- acquisition (I-language change)

That is, we must account for both the initiation of the change, the variation and innovations, on the one hand, and the integration of these E-language innovations into a stable I-language, on the other hand. However, most generative approaches in recent literature do not offer a complete explanation of a syntactic change, as they only focus on the precise nature of the parameter change in question, ignoring the prior (external) change in the trigger experience (PLD).

As noted by Lightfoot (1982:164), it is difficult to state precisely which changes are due to chance factors and which are prompted by the theory of grammar. “It is reasonable to suppose that changes involving the *loss* of certain sentence types, … must be due to principled factors, because it is hard to imagine why a sentence type could cease to occur for reasons of stylistic force or foreign borrowing” (Lightfoot 1982:164). In short, we

can say that the two different steps in the diachronic change, the change in PLD, or what we have been calling the E-language change, and the following I-language change, can be regarded as a) an external change (caused by language contact or (other) changes in the society) and b) a biological (internal) change.

Note that our view here differs from Kroch's (1989) hypothesis regarding change through competition: This hypothesis entails that linguistic change may involve a synchronic competition of two or more syntactic phenomena during a certain period of time. It is assumed that it is possible to observe a variation within the language of individual speakers; "… speakers learning a language in the course of a gradual change learn two sets of well-formedness principles for certain grammatical subsystems … over historic time pressures associated with usage (presumably processing or discourse function based) drive out one of the alternatives" (Kroch 1989a:349). Thus, when the language learner is confronted with competing analyses, she generates two different grammars, which in turn compete for dominance in the linguistic community. Kroch further claims that, at least in some instances, a language change occurs by a synchronic competition between two linguistic forms. He mentions that quantitative studies in diachronic linguistics have shown that a language change not only often takes place gradually rather than abruptly, but also that "one generation is more likely to differ from its predecessor in the frequency with which its speakers use certain forms than in whether those forms are possible at all" (Kroch 1989a:348). Although we find these assumptions very important, we take them to be instances of E-language change (a change in a population of speakers), rather than grammar change. Sprouse and Vance (1999) follow Kroch's hypothesis, claiming that:

> Parametric change involves a change in the underlying grammar, which may or may not result in a striking change in the linguistic environment. Change through competition results in no change in the underlying grammar, and it results in a subtle change in the linguistic environment, measured in the relative frequencies of the forms involved. Parametric change is relatively sudden.
>
> (Sprouse and Vance 1999:277)

Instead, we claim that there are two different types of changes involved here. The first occurring when the two forms first entered the language, from one form in the ancient language: that is, we have an innovation of (micro)-variation. Then, there is a period of diffusion of the innovation (competing forms as Sprouse and Vance are describing), and finally we have a grammar change when one of these forms disappears (usually the old form). Hence, we have two different changes that do not necessarily have the same explanation as they arise from different PLD (different

generation of speakers), with a period of diffusion in between the two changes. In our view, this diffusion is really what Sprouse and Vance (1999) are focusing on, and this diffusion/competition can in turn explain the latter change, the grammar change; that is, how or why the PLD became different, paving the way for the grammar change.

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